Profesional paper

SOME OF RISK FACTORS AND THEIR IMPACT ON STOMACH CANCER, OUR EXPERIENCE AND REVIEW OF LITERATURE

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Medicus 2021, Vol. 26 (2): 206-210

ABSTRACT

Stomach cancer is the second most common cause of cancer-related deaths in the world.

The epidemiology of gastric cancer has changed in recent decades, there is a downward trend in its incidence levels, which as a result of the effect of increased standards of hygiene, adjustment of style or model and manner of nutrition, treatment of accuracy and negativity of Helicobacter pylori, which in plurals constitute the group of primary prevention of this pathology.

However, the prevention of stomach cancer remains a priority for all health professionals who deal with the management of gastric pathologies.

The most effective ways to treat gastric cancer are based on early detection, maintaining a balanced diet, moderate alcohol use, smoking cessation, body weight balance, NSAID use, without forgetting genetic predisposition or genetic predisposition previous stomach.

Our objectives were: Evidence and detailed statistical description of risk factors of stomach cancer patients are included in this study were hospitalized in two clinical surgery medical centers in the period from January 2009 to January 2019, in University Clinical Center in Prishtina-Department of Surgery, Regional Hospital in Ferizaj-Department of Surgery.

Material and methods: The study included 115 patients who met the criteria, and the Study variables were obtained from risk factor data that include: risk factor (Gender, Age, presence of Helicobacter pylori infection, Diet, Alcohol use, Tobacco use; Previous stomach surgery, Being overweight or obese, Some types of stomach polyps, Pernicious anemia...

Conclusion: In relation to risk factors, we can confirm that, early detection of Gastric Cancer is vital in its primary prevention. Among the variable risk factors that favour the occurrence of stomach cancer and depend on the patient are; moderate alcohol intake, quitting smoking and maintaining a normal weight, maintaining a balanced diet; and those that depend on the medical treatment: Eradication of H. pylori, taking into account the correct treatment and reassessment for doubtful cases.

Keywords: gastric cancer, risk factors, Helicobacter pylori, smoking, treatment

INTRODUCTION

Most (approximately 90%) of stomach cancers are adenocarcinomas, which originate from the glands of the superficial layer, or mucosa, of the stomach, other types which originate from lymphomas and lymphoid tissue associated with the mucosa (MALT), and leiomyosarcomas, which arise from the muscles surrounding the mucosa.

In according classification by Lauren stratifies GC adenocarcinomas into two main histological types: diffuse and intestinal [1]. These two types not only look different under the microscope, but also differ in by gender, age at diagnosis, and other epidemiological features [2].

The stomach is divided into several anatomical regions, including the cardia (approximately the upper part of the stomach), the fundus, the body, the pylorus, and the antrum. These areas are distinguished by anatomical demarcations, histological changes, or both.

Overall, there were 10.9 million new cases, 6.7 million deaths, and 24.6 million persons alive with cancer (within three years of diagnosis). The most commonly diagnosed cancers are lung (1.35 million), breast (1.15 million), and colorectal (1 million); the most common causes of cancer death are lung cancer (1.18 million deaths), stomach cancer (700,000 deaths). [3]

Stomach cancer is a malignant pathology that is quite common, and ranks fourth, by frequency, of all malignant pathologies worldwide (approximately 1 million new cases per year in 2008) and continues to be the second leading cause. of deaths (738,000 deaths per year) of all malignant pathologies worldwide. [4, 5]

In the early stages it is asymptomatic, while it becomes symptomatic in the advanced stages.

The incidence of gastric cancer shows a wide geographical variation, where we more than 50% of new cases occur in developing countries, and there is a 15-20-fold difference in risk scale between the highest and highest risk population groups low.

Within recent decades, its incidence has steadily declined.

Geographically, the high-risk areas are East Asia (China and Japan), Eastern Europe, Central and South America, while the low-risk areas are South Asia, North and East Africa, North America, Australia. and New Zealand. [6]

Steady declines in the incidence of gastric cancer have been observed worldwide in recent decades, [3] it is already evident in young patients with non-cardiac type, sporadic type or intestinal type as reported in Japanese studies. [7, 8]

On the other hand, in an American study differentiates gastric cancer by race and age, as well as the anatomical subtype of stomach cancer with localization in the body, which have an increasing tendency. [9] However, the overall declining incidence of gastric cancer can be explained by rising standards of hygiene, maintaining and improving food quality, increased use of fresh fruits and vegetables, and by correct treatment of Helicobacter pylori (H. pylori). [10]

ANALYSIS OF DATA

Continuous data are shown as mean values (SD), for nonparametric values are presented as median values with 95% reliability in value. Categorical variables are shown as a percentage.

Comparative statistical analysis was done with the help of a chi-squared test for qualitative data. For statistically significant data the value $P < 0.05$ was taken.

Evidence and detailed statistical description of risk factors of stomach cancer patients are included in this study were hospitalized in two clinical surgery medical centers in the period from January 2009 to January 2019, in University Clinical Center in Prishtina-Department of Surgery, Regional Hospital in Ferizaj-Department of Surgery.

In our study are included 115 patients, for study convenience and to assess the most affected age, we grouped in 8 decades the patients studied, the most affected age group was, the age range was from 17-90 years. The most affected age group is 51-70 years which includes about 61.6% of patients.(tab 1)

Table 1. The age distribution of all patients (M + F)

Age groups	10-20	21 - 30	31-40	41-50	51-60*	61-70*	71-80	81-90
No. of pat	1	2	8	18	51	40	13	2
%	0.8	1.7	6.9	15.6	26.9	34.7	11.3	1.7

In our study are included 115 patients, and the stomach cancer affects both gender with a preference of men with a ratio of 4: 1 (M; F), [M - 92; (80%): F - 23(20%)].

Fibrogastroscopy was applied to all patients studied was performed using 15% xylocaine gel as a local anesthetic. At least eight biopsies were then taken from the suspected areas in each patient, which were fixed in ten percent formalin at room temperature and later processed for histopathology.

Biopsy material was also taken from normal mucosa for the determination of Helicobacter pylori.

For Helicobacter pylori testing, rapid urease test 90% and specificity 90%, and the change in color from yellow to red within the time period of 15-20 minutes confirmed the presence of H. pylori.

In our study H. pylori was positive in 103 (89.5%) cases which after histopathological examination with gastric carcinoma with the most frequent incidence in the intestinal subtype (93.6%) followed by diffuse type (81.6%), according to Lauren classification.

Regarding smokers, in our study we divided them into three groups: a) had never used tobacco - 21 (18.2%) [M – 8(6.9%): F – 13 (11.3%)]; b) had over 5 years of smoking cessation - 26 (22.7%), [M – 21 (18.2%): F – 5 (4.5 %)]; c) were smokers at the time of diagnosis - 68 (59.1%) [M – 63 (54.6 %): F – 5 (4.5 %)]; (Tab. 2)

In our registered cases, we have done the identification of alcohol users in our study we divided them into three groups: a) had never used alcohol - 22 (19.1%) [M – 14 (12.1%): F – 8 (7.0 %)]; b) had sometimes used alcohol - 45(39.2%), [M – 33 (28.6%): F – 12 (10.6%)]; c) had everyday used alcohol - 48 (41.7%) [M – 45 (39.1 %): F – 3 (2.6%)]; (Tab. 2)

	M		F		Total	
	No.	%	No.	%	No.	%
Smokers						
a) had never used tobacco	8	6.9	13	11.3	21	18.2
b) had over 5 years of smoking cessation	21	18.2	5	4.5	26	22.7
c) were smokers at the time of diagnosis	63	54.6	5	4.5	68	59.1
Alcohol users						
a) had never used alcohol	14	12.1	8	7.0	22	19.1
b) had sometimes used alcohol	33	28.6	12		45	39.2
c) had everyday used alcohol	45	39.1	3	2.6	48	41.7

Table 2 Distribution of data for Smokers and Alcohol users

DISCUSSION

The incidence rate of GC rises progressively with age. In our study are included 115 patients, for study convenience and to assess the most affected age, we grouped in 8 decades the patients studied, the most affected age group was, the age range was from 17-90 years. The most affected age group is 51-70 years which includes about 61.6% of patients. [11]

Howlader et al. in a study of cases diagnosed between 2005 and 2009 in the United States, approximately 1% of cases occurred between the ages of 20 and 34 years, while 29% occurred between 75 and 84 years [12]. During this period, the mean age at diagnosis of GC was 70 years [12].

In our study are included 115 patients, and the stomach cancer affects both gender with a preference of men with a ratio of 4: 1 (M; F). (92;23; 80%: 20%)

Brown et al. found that gastric cancer, males have a higher risk of both cardia (5X) noncardia GC (2X) compared to females [13]. The reasons for such differences are not clear. Environmental or occupational exposures may play a role, estrogens may protect against the development of GC.

Sheh et al. found in women, delayed menopause and increased fertility may lower the risk of GC, whereas anti-estrogen drugs, e.g., tamoxifen may increase the rates of GC [14].

Sipponen et al. found that these hormones may provide protection against GC during the fertile years of women but their effect is diminished after menopause, such that females develop GC in a manner similar to males, albeit with a 10-to-15-year lag after their male counterparts [15].

In our study H. pylori was positive in 103 (89.5%) cases which after histopathological examination with gastric carcinoma with the most frequent incidence in the intestinal subtype (93.6%) followed by diffuse type (81.6%), according to Lauren classification.

In 1994, H. pylori was classified as a class I carcinogen by the International Agency for Research on Cancer. [16]

Studies (Parsonnet & Howson et al.) from different parts of the world showed linear relationship between gastric cancer and H. pylori infection [18, 19].

Mukaisho et al. in their study shown in 90% of cases the non-cardiac subtype is associated with the H. pylori [17]. In the general population, according to Gonzales et al. It was found that H. pylori infection reaches approximately 60%, but in patients with GC, it is more common (84%) or even unavoidable (non-cardiac GC). [20, 21]

Regarding smokers, in our study we divided them into three groups: a) had never used tobacco - 21 (18.2%) [M – 8(6.9%): F – 13 (11.3%)]; b) had over 5 years of smoking cessation - 26 (22.7%), [M – 21 (18.2%): F – 5 (4.5 %)]; c) were smokers at the time of diagnosis - 68 (59.1%) [M – 63 (54.6 %): F – 5 (4.5 %)]; (Tab. 2)

A meta-analysis of time studies Ladeiras-Lopes et al. showed that the risk of GC was increased by only 60% (RR: 1.6) in men who smoked and 20% (RR: 1.2) in women who smoked compared to never smokers and are also weaker in ex-smokers [22], and the risk of GC is lower in former smokers compared with occasional smokers, and smokers with higher consumption of cigarettes (>20 cigarettes per day) are at higher risk of GC. [22]

While studies vary, Cook et al. generally the accumulated data suggest that smoking is a risk factor for both cardiac and noncardiac GC [23].

Nishino et all. has been shown that the risk of GC is increased by 60% in male and 20% in female smokers compared to non-smokers.[24]

In our registered cases, we have done the identification of alcohol users in our study we divided them into three groups: a) had never used alcohol - 22 (19.1%) [M – 14 (12.1%): F – 8 (7.0 %)]; b) had sometimes used alcohol - 45(39.2%), [M – 33 (28.6%): F – 12 (10.6%)]; c) had everyday used alcohol - 48 (41.7%) [M – 45 (39.1 %): F – 3 (2.6%)]; (Tab. 2)

In our study we found that men are the most users of alcohol and their share who consume alcohol every day by about 41.7%, [25] which does not make much difference to those who have ever used alcohol in 39.2% of cases, what stands out is the number of women who use alcohol with 13% of cases taken in the study, which are in sync with the literature data as follows; Marcos-Prieto et al. shown that an individual with dangerous alcohol consumption, regardless of age.[26] In their study Kim MH et al. found High-risk alcohol use should be considered as one of the risk factors that may contribute to this recent epidemiological trend in the Korea [26]. Matsuo K et al. recorded that people are at a higher risk of alcohol stomach cancer, even with the amount of alcohol intake [27].

CONCLUSION

In relation to risk factors, we can confirm that, early detection of Gastric Cancer is vital in its primary prevention. Among the variable risk factors that favour the occurrence of stomach cancer and depend on the patient are; moderate alcohol intake, quitting smoking and maintaining a normal weight, maintaining a balanced diet; and those that depend on the medical treatment: Eradication of H. pylori, taking into account the correct treatment and reassessment for doubtful cases.

COI Statement: This paper has not been submitted in parallel.

This research received no specific grant from any funding agency in the public, commercial, or nonprofit sectors. There are no relevant or minor financial relationships from authors, their relatives or next of kin with external companies.

Conflict of Interest Statement; There is no conflict of interest

Authorship Contribution; The first author has done the conception or design of the work and data collection and analysis. The second author has done the data analysis and interpretation as well as drafting the article and critical revision of the article. The third author did the English writing of the work, the collection, the data control, the English writing of the Article.

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